

AMENDMENTS TO THE CLAIMS

Please amend the claims as follows:

1. (Currently Amended) A filter element comprising:

a plurality of resonators that are arranged in series arms and parallel arms in a circuit and have a single piezoelectric thin film common to the plurality of resonators,

at least one of the series-arm resonators including the series-arm resonator at the first stage on the signal input side being composed of a plurality of single-terminal pair piezoelectric thin-film resonators connected in parallel,

at least one of the parallel-arm resonators being composed of only one single-terminal pair piezoelectric thin-film resonator.

2. (Currently Amended) The filter element as claimed in claim 1, wherein at least one of the parallel-arm resonators ~~includes~~ including the parallel-arm resonator at the first stage is composed of a plurality of single-terminal pair piezoelectric thin-film resonators connected in parallel.

3. (Currently Amended) A filter element comprising:

a plurality of resonators that are arranged in series arms and parallel arms in a circuit and have a single piezoelectric thin film common to the plurality of resonators,

at least one of the parallel-arm resonators including the parallel-arm resonator at the first stage on the signal input side connected directly to an input

terminal of the filter element is composed of a plurality of single-terminal pair piezoelectric thin-film resonators connected in parallel.

4. (Currently Amended) A filter element comprising:

a plurality of resonators that are arranged in series arms and parallel arms in a circuit and have a single piezoelectric thin film common to the plurality of resonators,

~~at least each of all the series-arm and/or parallel-arm resonators at the first stage on the signal input side~~ including a plurality of single-terminal pair piezoelectric thin-film resonators connected in parallel.

5. (Original) The filter element as claimed in claim 1, wherein the series-arm resonator including the plurality of single-terminal pair piezoelectric thin-film resonators connected in parallel has an admittance matched with the admittance of at least one of the other series-arm resonators.

6. (Original) The filter element as claimed in claim 2, wherein the parallel-arm resonator including the plurality of single-terminal pair piezoelectric thin-film resonators connected in parallel has an admittance matched with the admittance of at least one of the other parallel-arm resonators.

7. (Original) The filter element as claimed in claim 1, wherein the single-terminal pair piezoelectric thin-film resonators connected in parallel have exciting parts that are uniform in size.

8. (Original) The filter element as claimed in claim 1, which has a ladder filter structure.

9. (Original) The filter element as claimed in claim 1, which has a lattice filter structure.

10. (Previously Presented) The filter element as claimed in claim 1, wherein:

the single-terminal pair piezoelectric thin-film resonators include a substrate that contains at least one of silicon, glass, and ceramics;

the piezoelectric thin film contains at least one of aluminum nitride, zinc oxide, lead zirconate titanate, and lead titanate; and

an upper electrode film and a lower electrode film that are single-layer or multi-layer films containing at least one of aluminum, copper, gold, molybdenum, tungsten, tantalum, chromium, titanium, platinum, and rhodium.

11. (Original) The filter element as claimed in claim 1, wherein the parallel-arm resonators each includes an upper electrode film having a SiO₂ film formed thereon.

12. (Currently Amended) A filter device comprising:

a filter element[[:]]; and

a package that houses the filter element,

the filter element including

a plurality of resonators that are arranged in series arms and parallel arms in a circuit and have a single piezoelectric thin film common to the plurality of resonators,

at least one of the series-arm resonators including the series-arm resonator at the first stage on the signal input side being composed of a plurality of single-terminal pair piezoelectric thin-film resonators connected in parallel,

at least one of the parallel-arm resonators being composed of only one single-terminal pair piezoelectric thin-film resonator.

13. (Currently Amended) A duplexer comprising:

a transmission filter element and a reception filter element,

the transmission filter element including a plurality of resonators that are arranged in series arms and parallel arms in a circuit and have a single piezoelectric thin film common to the plurality of resonators,

at least one of the series-arm resonators including the series-arm resonator at the first stage on the signal input side being composed of a plurality of single-terminal pair piezoelectric thin-film resonators connected in parallel,

at least one of the parallel-arm resonators being composed of only one single-terminal pair piezoelectric thin-film resonator.

14. (Currently Amended) A duplexer comprising:

a transmission filter element and a reception filter element,

the transmission filter element including a plurality of resonators that are arranged in series arms and parallel arms and have a single piezoelectric thin film common to the plurality of resonators,

at least one of the parallel-arm resonators including the parallel-arm resonator at the first stage on the signal input side connected directly to an input terminal of the filter element is composed of a plurality of single-terminal pair piezoelectric thin-film resonators connected in parallel.

15. (Currently Amended) A high-frequency circuit that transmits and receives radio signals, comprising:

a first amplifier that amplifies transmission signals;

a second amplifier that amplifies reception signals; and

a duplexer that includes a transmission filter element and a reception filter element,

the transmission filter element including a plurality of resonators that are arranged in series arms and parallel arms in a circuit and have a single piezoelectric thin film common to the plurality of resonators, and

at least one of the series-arm resonators including the series-arm resonator at the first stage on the signal input side being composed of a plurality of single-terminal pair piezoelectric thin-film resonators connected in parallel,

at least one of the parallel-arm resonators being composed of only one single-terminal pair piezoelectric thin-film resonator.

16. (Currently Amended) A high-frequency circuit that transmits and receives radio signals, comprising:

a first amplifier that amplifies transmission signals;

a second amplifier that amplifies reception signals; and

a duplexer that includes a transmission filter element and a reception filter element,

the transmission filter element including a plurality of resonators that are arranged in series arms and parallel arms in a circuit and have a single piezoelectric thin film common to the plurality of resonators, and

at least one of the parallel-arm resonators including the parallel-arm resonator at the first stage on the signal input side connected directly to an input terminal of the filter element is composed of a plurality of single-terminal pair piezoelectric thin-film resonators connected in parallel.

17. (Currently Amended) A high-frequency circuit that transmits radio signals, comprising:

an amplifier that amplifies transmission signals; and

a filter element that filters the transmission signals,

the filter element including a plurality of resonators that are arranged in series arms and parallel arms in a circuit and have a single piezoelectric thin film common to the plurality of resonators, and

at least one of the series-arm resonators including the series-arm resonator at the first stage on the signal input side being composed of a plurality of single-terminal pair piezoelectric thin-film resonators connected in parallel,

at least one of the parallel-arm resonators being composed of only one single-terminal pair piezoelectric thin-film resonator.

18. (Currently Amended) A high-frequency circuit that transmits radio signals, comprising:

an amplifier that amplifies transmission signals; and

a filter element that filters the transmission signals,

the filter element including a plurality of resonator that are arranged in series arms and parallel arms in a circuit and have a single piezoelectric thin film common to the plurality of resonators, and

at least one of the parallel-arm resonators including the parallel-arm resonator at the first stage on the signal input side connected directly to an input terminal of the filter element is composed of a plurality of single-terminal pair piezoelectric thin-film resonators connected in parallel.

19. (Currently Amended) A filter element comprising:

a plurality of resonators that are arranged in series arms and parallel arms in a circuit,

only the series-arm and/or parallel-arm resonators at the first stage on the signal input side including a plurality of single-terminal pair piezoelectric thin-film[[,]] resonators connected in parallel.

20. (Currently Amended) A filter element comprising:

a plurality of resonators that are arranged in series arms and parallel arms in a circuit,

the series-arm resonators at the first stage on the signal input side including single-terminal pair piezoelectric thin-film resonators connected in parallel ~~more than a single-terminal pair piezoelectric thin-film resonator~~ in each of the other series-arm resonators.